

REMARKS

Claims 1-18 and 20-40 are presented for further examination. Claim 19 has been canceled, and claims 1-3, 6, 7, 18, 20-22, 24, 26-30, and 34 have been amended. Claims 35-40 are new.

In the Office Action mailed April 2, 2004, the Examiner objected to claim 34 because the punctuation made it appear that each pumping line included a switching network, a control circuit, and a phase assignor. Applicants have made appropriate corrections to claim 34 such that each of the elements making up the charge pump are distinct from those elements making up the pumping line.

Claim 18 was rejected under 35 U.S.C. § 102(b) as anticipated by Japanese Patent No. 407,111,095 (“Tanzawa et al.”). Claims 18 and 23 were rejected as anticipated by U.S. Patent No. 6,121,821 (“Miki”). Claims 1, 26, 27, 30, and 32 were rejected as anticipated by Miki or in the alternative under 35 U.S.C. § 103(a) as obvious over Miki in view of U.S. Patent No. 5,912,560 (“Pasternak”). Claims 1-4, 7, 26-28, and 30 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,767,735 (“Javanifard et al.”) in view of Pasternak. Claims 8 and 9 were rejected as obvious over Javanifard et al. in view of Pasternak and further in view of U.S. Patent No. 6,150,835 (“Hazen et al.”).

Claims 12-17 and 34 were allowed. Claims 5, 6, 10, 11, 19-22, 24, 25, 31, and 33 were found to be allowable if rewritten into independent form. Applicants acknowledge with appreciation the allowance of the foregoing claims.

Applicants respectfully request reconsideration and reexamination of the rejected claims in light of the amendments made herein, which are discussed more fully below.

Claim 1 has been amended to now include the recitation of a pair of additional switches configured to separately couple the first and second pumping capacitors to the input and output lines such that for any pumping operation either one of the first and second pumping capacitors may selectively not be used. In the Examiner’s statement of reasons for allowance of claims 12-17, the Examiner stated that by providing additional switches, “it is possible to separately couple the first and second capacitor to the input and output lines, such that for any pumping operation, either one of the capacitors may selectively not be used.” The remarks

further state: "It is the examiner's opinion that such a modification is critical, since it enhances the flexibility of each charge pump stage in providing varying voltage outputs, and thus it would not have been obvious to a person skilled in the art to add the extra switches." In view of the foregoing statements by the Examiner, applicants respectfully submit that claim 1 now includes at least five switches used to selectively control operation of each pumping capacitor and hence claim 1 is clearly allowable, as are all claims depending therefrom, *i.e.*, claims 2-11, and claims 31-33.

Claim 18 has been amended to include the limitations of allowable claim 19. Hence, claim 18 is now dependent claim 19 rewritten into independent form to include the limitations of the base claim. Applicants respectfully submit that claim 18 and dependent claims 20-25 are now clearly in condition for allowance.

Independent claim 26 has been amended to recite a method of connecting a set of charged capacitors utilizing a plurality of switches forming a switching network, the network comprising accepting a voltage input signal at an input terminal; and applying a series of phase signals to the charge capacitors and applying phase signals to the switching network to separately couple any one of the charge capacitors to the input terminal and an output terminal such that for any pumping operation any combination of the charge capacitors may selectively not be used to produce an output voltage at the output terminal, the output voltage different than the input voltage. In view of the Examiner's remarks set forth above with respect to claim 1, applicants respectfully submit that claim 26 and all claims depending therefrom, *i.e.*, claims 27-30, are now in condition for allowance.

Independent claim 34, which was allowed over the art, has been amended as requested by the Examiner with respect to the punctuation and is now in condition for allowance.

New claims 35-37 are allowable dependent claims 24, 31, and 33, respectively, rewritten into independent form with their respective base claims, *i.e.*, independent claims 18, 1, and 1, respectively. Applicants respectfully submit that these claims are allowable for the reasons why dependent claims 24, 31, and 33 are allowable.

New claim 38 is directed to a charge pump that comprises at least two charge capacitors and a switching network configured to separately couple and uncouple the at least two

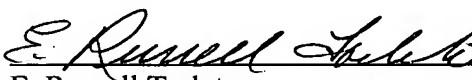
charge capacitors to input and output lines such that for any pumping operation, any combination of the at least two charge capacitors may not be used. Dependent claim 39, which depends from claim 38, recites the switching network as comprising at least five switches. In view of the statements by the Examiner as to the reasons as to the allowability of claims 5, 6, 31, 33, 34, and 12-17, applicants respectfully submit that claims 38 and 39 are allowable.

New claim 40 is directed to a circuit that comprises at least two capacitors and a plurality of switches configured to couple and uncouple each of the at least two capacitors individually to input and output lines to provide configurable phases between each of the at least two capacitors. Applicants respectfully submit that claim 40 is allowable for the reasons stated by the Examiner with respect to the allowability of claims 5, 6, 31, 33, and 34, *i.e.*, that providing configurable phases between the at least two capacitors is distinguishable over the art of record which simply uses opposite phases.

In view of the foregoing, applicants submit that all of the claims remaining in this application are now in condition for allowance. In the event the Examiner finds minor informalities that can be resolved by telephone conference, the Examiner is urged to contact applicants' undersigned representative by telephone at (206) 622-4900 in order to expeditiously resolve prosecution of this application. Consequently, early and favorable action allowing these claims and passing this case to issuance is respectfully solicited.

Respectfully submitted,

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